

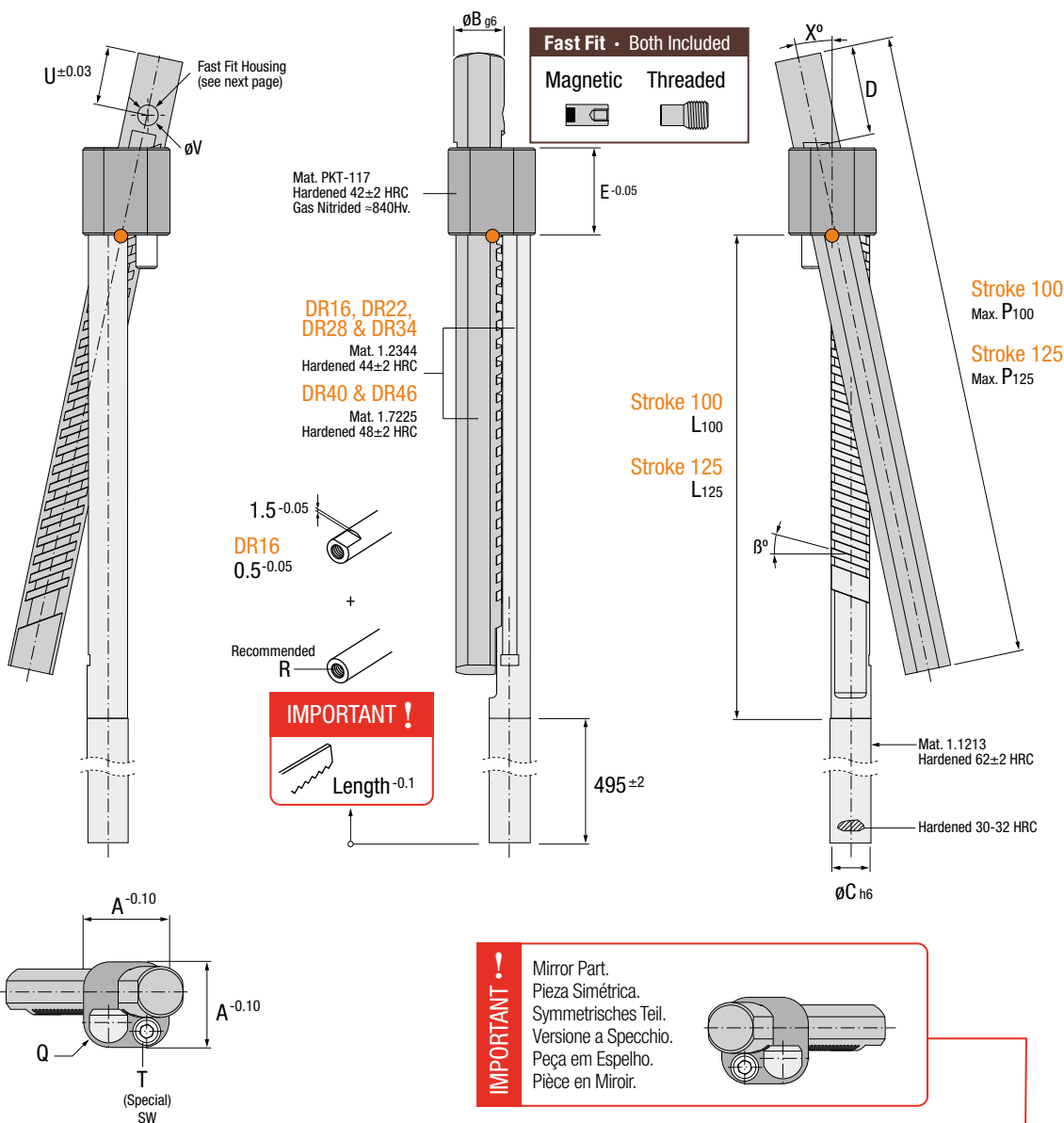
# DOUBLE RACK LIFTER

ES Doble Cremallera DE Zweifach Zahnstangen-System  
IT Doppia Cremagliera PT Duplo Rack FR Double Cremaillere

● Cad Insertion Point

# DR

Patented



| Stroke 100  | Stroke 125  | X° |    | A  | B  | C  | D  | E  | L100 | P100 | L125  | P125 | Q     | R   | T    | U   | V   | Stroke 100-S | Stroke 125-S | SW            |               |   |
|-------------|-------------|----|----|----|----|----|----|----|------|------|-------|------|-------|-----|------|-----|-----|--------------|--------------|---------------|---------------|---|
| DR.16100L-x | -           | 8  | 12 | 16 | -  | 16 | 9  | 8  | 20   | 20   | 142   | 178  | -     | -   | 4    | M5  | M5  | 10           | 6            | DR.16100L-x-S | -             | 3 |
| DR.22100L-x | DR.22125L-x | 8  | 12 | 16 | 20 | 22 | 12 | 12 | 30   | 22   | 148   | 202  | 202   | 261 | 6.5  | M6  | M6  | 17           | 8            | DR.22100L-x-S | DR.22125L-x-S | 4 |
| DR.28100L-x | DR.28125L-x | 8  | 12 | 16 | 20 | 28 | 16 | 14 | 36   | 28   | 152.5 | 214  | 194.5 | 266 | 8.5  | M8  | M8  | 23           | 8            | DR.28100L-x-S | DR.28125L-x-S | 5 |
| DR.34100L-x | DR.34125L-x | 8  | 12 | 16 | 20 | 34 | 20 | 16 | 36   | 34   | 160.5 | 227  | 188.5 | 264 | 10.5 | M8  | M8  | 23           | 8            | DR.34100L-x-S | DR.34125L-x-S | 5 |
| DR.40100L-x | DR.40125L-x | 8  | 12 | 16 | 20 | 40 | 22 | 20 | 36   | 40   | 170   | 244  | 204   | 284 | 10.5 | M10 | M10 | 20           | 10           | DR.40100L-x-S | DR.40125L-x-S | 6 |
| DR.46100L-x | DR.46125L-x | 8  | 12 | 16 | 20 | 46 | 24 | 24 | 42   | 46   | 175   | 258  | 201   | 289 | 10.5 | M10 | M12 | 26           | 10           | DR.46100L-x-S | DR.46125L-x-S | 8 |

**IMPORTANT !**

Replace the **X** in the reference with the required X° dimension (8°, 12°, 16° or 20°) and indicate the required β°.  
Sustituir la **X** de la referencia por la cota X° deseada (8°, 12°, 16° o 20°), e indique el ángulo β° requerido.  
Ersetzen Sie das **X** der Referenz durch den gewünschten X° Winkel (8°, 12°, 16° oder 20°). Geben Sie den benötigten β° Winkel an.  
Sostituite la **X** del codice con l'angolo X° desiderato (8°, 12°, 16° o 20°) e indicate la β° richiesta.  
Substituir o **X** da referencia pela cota X° desejada (8°, 12°, 16° o 20°), e indique o angulo β° pretendido.  
Remplacez la valeur **X** par la valeur angulaire X° désirée (8°, 12°, 16° ou 20°). Ensuite indiquez l'angle β° correspondant.

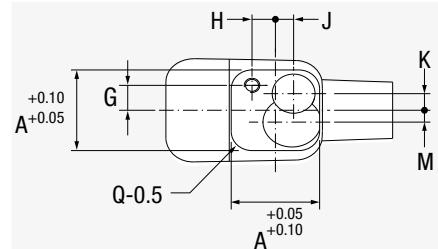
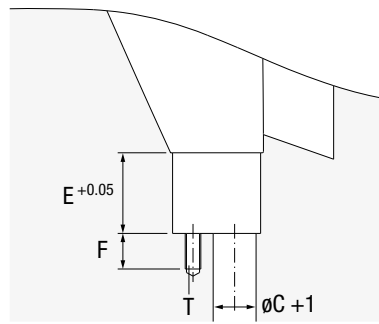
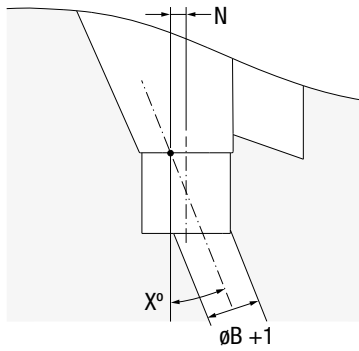
# INSTALLATION GUIDELINES

ES Consejos de Instalación DE Richtlinien zur Installation  
 IT Consigli di Installazione PT Instruções de Instalação FR Mode d'Installation

# DR

## Core Housing

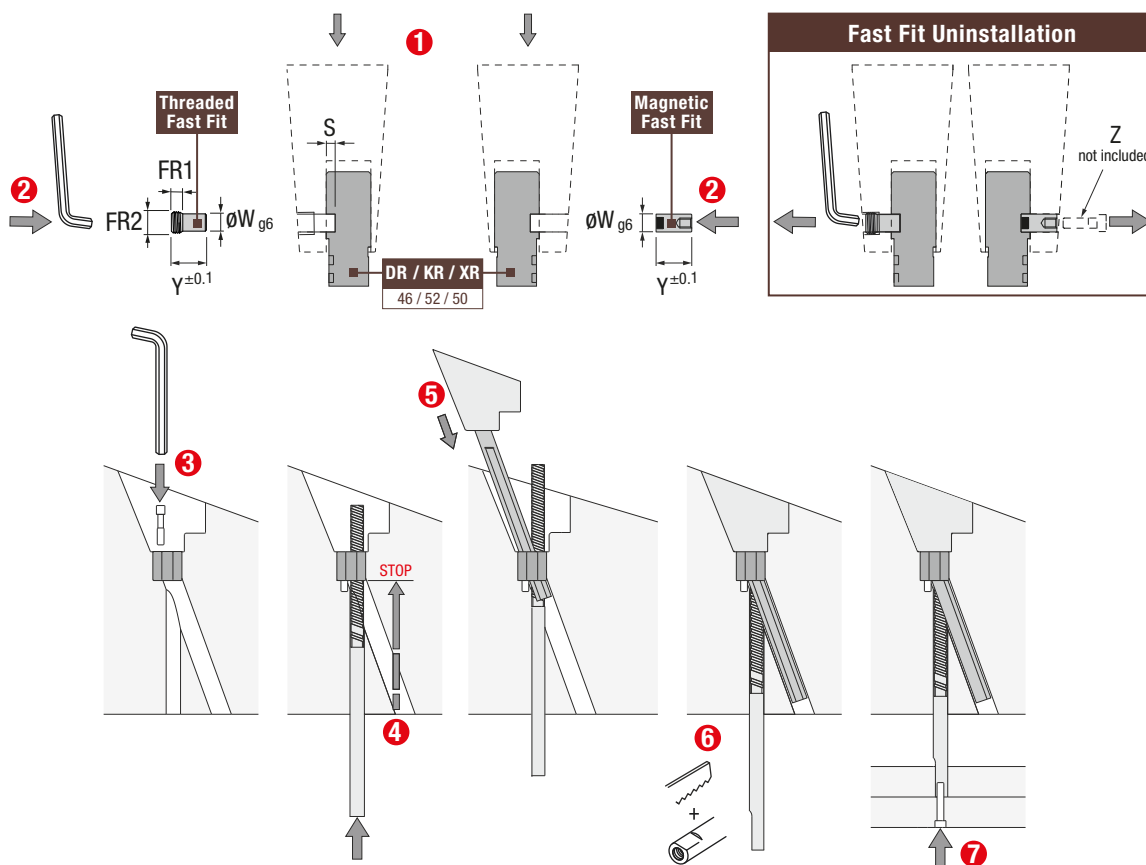
Alojamiento Placa Punzón  
 Einbaumaße DR Führung  
 Sede nel Punzone  
 Alojamento Bucha  
 Logement dans l'empreinte



| Stroke 100  | Stroke 125                | Stroke 200  | F  | FR1 | FR2     | G    | H    | J   | K    | M    | N   | S   | T   | W  | Y    | Z  |
|-------------|---------------------------|-------------|----|-----|---------|------|------|-----|------|------|-----|-----|-----|----|------|----|
| DR.16100L.. | -                         | -           | 10 | 4.9 | M8x1    | 4.6  | 4.6  | 3   | 2.35 | 3    | 2.8 | 2.5 | M5  | 6  | 9    | M4 |
| DR.22100L.. | DR.22125L.. / KR.22125L.. | -           | 13 | 5.3 | M10x1   | 5.6  | 5.6  | 4.2 | 3.7  | 4.2  | 3.5 | 2.5 | M6  | 8  | 12   | M4 |
| DR.28100L.. | DR.28125L.. / KR.28125L.. | -           | 16 | 5.3 | M10x1   | 7.5  | 7.5  | 5   | 5.4  | 4.8  | 4.8 | 2.5 | M8  | 8  | 13.5 | M4 |
| DR.34100L.. | DR.34125L.. / KR.34125L.. | -           | 16 | 5.3 | M10x1   | 10.5 | 8    | 7   | 7    | 5    | 6   | 4   | M8  | 8  | 16   | M4 |
| DR.40100L.. | DR.40125L..               | -           | 20 | 8.5 | M12x1   | 11   | 11   | 7   | 8    | 7    | 7   | 4   | M10 | 10 | 20   | M6 |
| DR.46100L.. | DR.46125L..               | -           | 25 | 8.5 | M12x1   | 13   | 13   | 8   | 8    | 9    | 9   | 5   | M12 | 10 | 24   | M6 |
| -           | -                         | KR.58200L.. | 28 | 8.5 | M16x1.5 | 15.5 | 15.5 | 10  | 12.2 | 11.2 | 10  | 5   | M14 | 12 | 30   | M6 |
| -           | -                         | KR.76200L.. | 36 | 14  | M16x1.5 | 21   | 21   | 13  | 15.2 | 15.2 | 12  | 6   | M18 | 12 | 36   | M6 |

## Installation

Instalación · Montage · Montaggio · Instalação · Montage

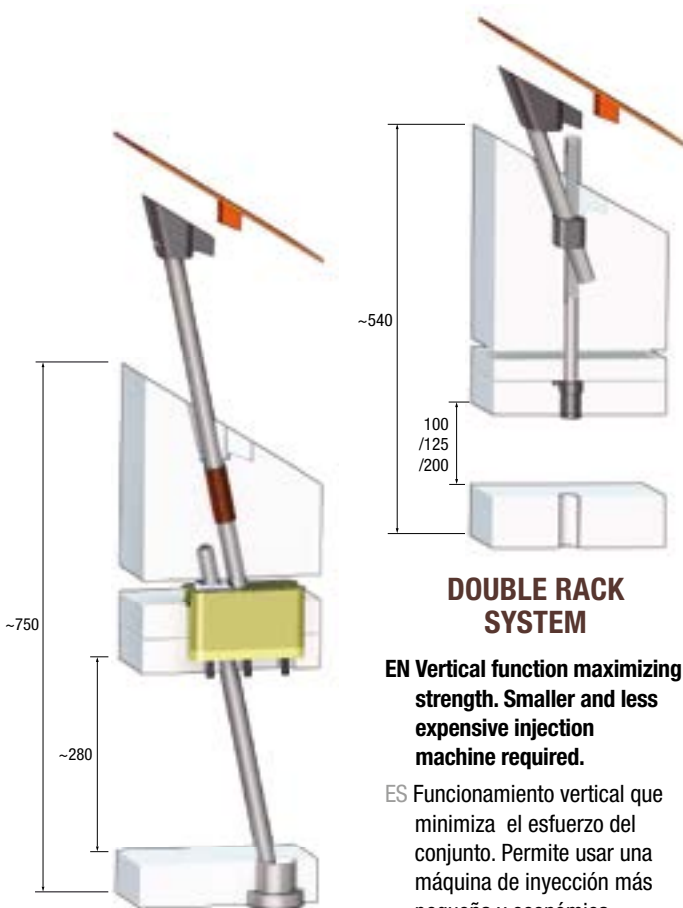


# DOUBLE RACK SYSTEM

## by CUMSA

### COMPARE

Comparativa · Vergleich · Confronto · Comparativo · Comparatif



### CONVENTIONAL SYSTEM

**EN Eliminates the need for high-precision angled housings in the core plates.**

**ES** Elimina los complicados taladros inclinados de alta precisión.

**DE** Es wird keine hochpräzise Schrägbohrung in der Formplatte benötigt.

**IT** Elimina le complicate lavorazioni inclinate ad alta precisione.

**PT** Elimina a necessidade de furos inclinados com precisão.

**FR** Terminé les logements inclinés de haute précision.

### DOUBLE RACK SYSTEM

**EN Vertical function maximizing strength. Smaller and less expensive injection machine required.**

**ES** Funcionamiento vertical que minimiza el esfuerzo del conjunto. Permite usar una máquina de inyección más pequeña y económica.

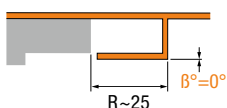
**DE** Vertikale Funktion mit maximaler Kraft. Ein kleineres Werkzeug kann eventuell eine kleinere und günstigere Spritzgießmaschine benötigen.

**IT** Funzionamento verticale che minimizza lo sforzo. Permette di usare una macchina d'iniezione più piccola ed economica.

**PT** Funcionamento na vertical minimizando o esforço. Permite o uso de máquinas de injeção de menores dimensões e mais económicas.

**FR** Fonctionnement vertical réduisant les efforts. Permet de réduire la dimension de la presse d'injection et ainsi de réaliser des économies.

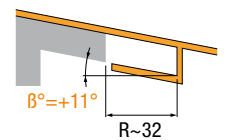
#### Neutral angles ( $\beta^\circ=0^\circ$ )



$S \geq R$

DR.xx100L-16  
KR.xx200L-16  
DR.xx125L-12  
KR.xx125L-12  
XR.xx100L-24

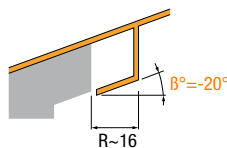
#### Positive Angles ( $\beta^\circ>0^\circ$ )



$S \geq R$

DR.xx100L-20  
DR.xx125L-16  
KR.xx125L-16  
XR.xx100L-24

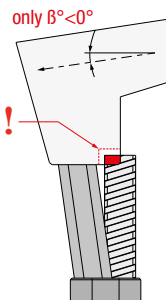
#### Negative Angles ( $\beta^\circ<0^\circ$ )



$S \geq R$

DR.xx100L-12  
KR.xx200 L-12  
DR.xx125L-8  
KR.xx125L-8  
XR.xx100L-24

**IMPORTANT !**



### Stroke 100 (DR) Stroke 200 (KR) (Multiply S value x2)

| $\beta^\circ$ | DR.xx100L-8          |                      | DR.xx100L-12         |                      |
|---------------|----------------------|----------------------|----------------------|----------------------|
|               | S (- $\beta^\circ$ ) | S (+ $\beta^\circ$ ) | S (- $\beta^\circ$ ) | S (+ $\beta^\circ$ ) |
| 0             | 14.0                 | 14.0                 | 21.2                 | 21.2                 |
| 1             | 14.0                 | 14.0                 | 21.1                 | 21.3                 |
| 2             | 13.9                 | 14.1                 | 21.1                 | 21.4                 |
| 3             | 13.9                 | 14.1                 | 21.0                 | 21.5                 |
| 4             | 13.9                 | 14.1                 | 20.9                 | 21.5                 |
| 5             | 13.8                 | 14.2                 | 20.8                 | 21.6                 |
| 6             | 13.8                 | 14.2                 | 20.7                 | 21.7                 |
| 7             | 13.8                 | 14.3                 | 20.7                 | 21.8                 |
| 8             | 13.7                 | 14.3                 | 20.6                 | 21.9                 |
| 9             | 13.7                 | 14.3                 | 20.5                 | 22.0                 |
| 10            | 13.7                 | 14.4                 | 20.4                 | 22.0                 |
| 11            | 13.6                 | 14.4                 | 20.4                 | 22.1                 |
| 12            | 13.6                 | 14.4                 | 20.3                 | 22.2                 |
| 13            | 13.6                 | 14.5                 | 20.2                 | 22.3                 |
| 14            | 13.5                 | 14.5                 | 20.1                 | 22.4                 |
| 15            | 13.5                 | 14.6                 | 20.1                 | 22.5                 |
| 16            | 13.5                 | 14.6                 | 20.0                 | 22.6                 |
| 17            | 13.4                 | 14.6                 | 19.9                 | 22.7                 |
| 18            | 13.4                 | 14.7                 | 19.8                 | 22.8                 |
| 19            | 13.4                 | 14.7                 | 19.8                 | 22.9                 |
| 20            | 13.3                 | 14.8                 | 19.7                 | 23.0                 |
| 21            | 13.3                 | 14.8                 | 19.6                 | 23.1                 |
| 22            | 13.2                 | 14.9                 | 19.5                 | 23.2                 |
| 23            | 13.2                 | 14.9                 | 19.4                 | 23.3                 |
| 24            | 13.2                 | 14.9                 | 19.4                 | 23.4                 |
| 25            | 13.1                 | 15.0                 | 19.3                 | 23.5                 |
| 26            | 13.1                 | 15.0                 | 19.2                 | 23.7                 |
| 27            | 13.1                 | 15.1                 | 19.1                 | 23.8                 |
| 28            | 13.0                 | 15.1                 | 19.0                 | 23.9                 |
| 29            | 13.0                 | 15.2                 | 19.0                 | 24.0                 |
| 30            | 12.9                 | 15.2                 | 18.9                 | 24.2                 |
| 31            | 12.9                 | 15.3                 | 18.8                 |                      |
| 32            | 12.9                 | 15.4                 | 18.7                 |                      |
| 33            | 12.8                 | 15.4                 | 18.6                 |                      |
| 34            | 12.8                 | 15.5                 | 18.5                 |                      |
| 35            | 12.7                 | 15.5                 | 18.5                 |                      |
| 36            | 12.7                 |                      | 18.4                 |                      |
| 37            | 12.7                 |                      | 18.3                 |                      |
| 38            | 12.6                 |                      | 18.2                 |                      |
| 39            | 12.6                 |                      | 18.1                 |                      |
| 40            | 12.5                 |                      | 18.0                 |                      |
| 45            | 12.3                 |                      | 17.5                 |                      |
| 50            | 12.0                 |                      | 16.9                 |                      |
| 55            | 11.7                 |                      | 16.3                 |                      |
| 60            | 11.3                 |                      | 15.5                 |                      |

# SELECTION TABLE: WHICH DR / KR DO I NEED?

ES TABLA DE SELECCIÓN: Qué DR / KR / XR necesito?

DE AUSWAHLTABELLE: Welcher DR / KR / XR ist am besten geeignet?

IT TABELLA PER SCELTA: Di quale DR / KR / XR ho bisogno?

PT TABELA DE SELEÇÃO: Qual é o DR / KR / XR que preciso?

FR TABLEAU DE CORRESPONDANCE: Quel est le DR / KR que j'ai besoin?



## Stroke 100 (DR) Stroke 200 (KR) (Multiply S value x2)

|      | DR.xx100L-16 |         | DR.xx100L-20 |         |
|------|--------------|---------|--------------|---------|
|      | S (-β°)      | S (+β°) | S (-β°)      | S (+β°) |
|      | 28.6         |         | 36.4         |         |
| 28.5 | 28.8         | 36.1    | 36.6         |         |
| 28.3 | 28.9         | 35.9    | 36.8         |         |
| 28.2 | 29.1         | 35.7    | 37.1         |         |
| 28.1 | 29.2         | 35.4    | 37.3         |         |
| 27.9 | 29.4         | 35.2    | 37.5         |         |
| 27.8 | 29.5         | 35.0    | 37.8         |         |
| 27.7 | 29.7         | 34.8    | 38.1         |         |
| 27.5 | 29.8         | 34.6    | 38.3         |         |
| 27.4 | 30.0         | 34.4    | 38.6         |         |
| 27.2 | 30.2         | 34.2    | 38.8         |         |
| 27.1 | 30.3         | 33.9    | 39.1         |         |
| 27.0 | 30.5         | 33.7    | 39.4         |         |
| 26.8 | 30.7         | 33.5    | 39.7         |         |
| 26.7 | 30.8         | 33.3    | 40.0         |         |
| 26.6 | 31.0         | 33.1    | 40.3         |         |
| 26.5 | 31.2         | 32.9    | 40.6         |         |
| 26.3 | 31.4         | 32.7    | 40.9         |         |
| 26.2 | 31.6         | 32.5    | 41.2         |         |
| 26.1 | 31.8         | 32.3    | 41.6         |         |
| 25.9 | 32.0         | 32.1    | 41.9         |         |
| 25.8 | 32.2         | 31.9    |              |         |
| 25.6 | 32.4         | 31.7    |              |         |
| 25.5 | 32.6         | 31.5    |              |         |
| 25.4 | 32.8         | 31.3    |              |         |
| 25.2 | 33.1         | 31.1    |              |         |
| 25.1 |              | 30.9    |              |         |
| 25.0 |              | 30.7    |              |         |
| 24.8 |              | 30.4    |              |         |
| 24.7 |              | 30.2    |              |         |
| 24.6 |              | 30.0    |              |         |
| 24.4 |              | 29.8    |              |         |
| 24.3 |              | 29.6    |              |         |
| 24.1 |              | 29.4    |              |         |
| 24.0 |              | 29.2    |              |         |
| 23.8 |              | 29.0    |              |         |
| 23.7 |              | 28.7    |              |         |
| 23.5 |              | 28.5    |              |         |
| 23.4 |              | 28.3    |              |         |
| 23.2 |              | 28.1    |              |         |
| 23.1 |              | 27.8    |              |         |
| 22.2 |              | 26.6    |              |         |
| 21.3 |              | 25.1    |              |         |
| 20.3 |              | 23.9    |              |         |
| 19.1 |              | 22.3    |              |         |

## Stroke 125 (DR / KR)

| β° | DR.xx125L-8 |         | DR.xx125L-12 |         | DR.xx125L-16 |         | DR.xx125L-20 |         |
|----|-------------|---------|--------------|---------|--------------|---------|--------------|---------|
|    | KR.xx125L-8 |         | KR.xx125L-12 |         | KR.xx125L-16 |         | KR.xx125L-20 |         |
|    | S (-β°)     | S (+β°) | S (-β°)      | S (+β°) | S (-β°)      | S (+β°) | S (-β°)      | S (+β°) |
| 0  | 17.5        |         | 26.5         |         | 35.8         |         | 45.4         |         |
| 1  | 17.5        | 17.6    | 26.4         | 26.6    | 35.6         | 36.0    | 45.2         | 45.7    |
| 2  | 17.4        | 17.6    | 26.3         | 26.7    | 35.4         | 36.2    | 44.9         | 46.0    |
| 3  | 17.4        | 17.6    | 26.2         | 26.8    | 35.3         | 36.3    | 44.6         | 46.3    |
| 4  | 17.3        | 17.7    | 26.1         | 26.9    | 35.1         | 36.5    | 44.3         | 46.6    |
| 5  | 17.3        | 17.7    | 26.0         | 27.0    | 34.9         | 36.7    | 44.0         | 46.9    |
| 6  | 17.3        | 17.8    | 25.9         | 27.1    | 34.7         | 36.9    | 43.8         | 47.3    |
| 7  | 17.2        | 17.8    | 25.8         | 27.2    | 34.6         | 37.1    | 43.5         | 47.6    |
| 8  | 17.2        | 17.9    | 25.7         | 27.3    | 34.4         | 37.3    | 43.2         | 47.9    |
| 9  | 17.1        | 17.9    | 25.7         | 27.4    | 34.2         | 37.5    | 43.0         | 48.2    |
| 10 | 17.1        | 18.0    | 25.6         | 27.6    | 34.1         | 37.7    | 42.7         | 48.6    |
| 11 | 17.1        | 18.0    | 25.5         | 27.7    | 33.9         | 37.9    | 42.4         | 48.9    |
| 12 | 17.0        | 18.1    | 25.4         | 27.8    | 33.7         | 38.1    | 42.2         | 49.3    |
| 13 | 17.0        | 18.1    | 25.3         | 27.9    | 33.6         | 38.3    | 41.9         | 49.6    |
| 14 | 16.9        | 18.2    | 25.2         | 28.0    | 33.4         | 38.6    | 41.7         | 50.0    |
| 15 | 16.9        | 18.2    | 25.1         | 28.1    | 33.2         | 38.8    | 41.4         | 50.4    |
| 16 | 16.8        | 18.3    | 25.0         | 28.2    | 33.1         | 39.0    | 41.1         | 50.7    |
| 17 | 16.8        | 18.3    | 24.9         | 28.4    | 32.9         | 39.2    | 40.9         | 51.1    |
| 18 | 16.8        | 18.4    | 24.8         | 28.5    | 32.7         | 39.5    | 40.6         | 51.5    |
| 19 | 16.7        | 18.4    | 24.7         | 28.6    | 32.6         | 39.7    | 40.4         | 52.0    |
| 20 | 16.7        | 18.5    | 24.6         | 28.7    | 32.4         | 40.0    | 40.1         | 52.4    |
| 21 | 16.6        | 18.5    | 24.5         | 28.9    | 32.2         | 40.2    | 39.9         |         |
| 22 | 16.6        | 18.6    | 24.4         | 29.0    | 32.1         | 40.5    | 39.6         |         |
| 23 | 16.5        | 18.6    | 24.3         | 29.2    | 31.9         | 40.8    | 39.4         |         |
| 24 | 16.5        | 18.7    | 24.2         | 29.3    | 31.7         | 41.0    | 39.1         |         |
| 25 | 16.4        | 18.7    | 24.1         | 29.4    | 31.6         | 41.3    | 38.8         |         |
| 26 | 16.4        | 18.8    | 24.0         | 29.6    | 31.4         |         | 38.6         |         |
| 27 | 16.3        | 18.9    | 23.9         | 29.7    | 31.2         |         | 38.3         |         |
| 28 | 16.3        | 18.9    | 23.8         | 29.9    | 31.1         |         | 38.1         |         |
| 29 | 16.2        | 19.0    | 23.7         | 30.1    | 30.9         |         | 37.8         |         |
| 30 | 16.2        | 19.1    | 23.6         | 30.2    | 30.7         |         | 37.5         |         |
| 31 | 16.1        | 19.1    | 23.5         |         | 30.5         |         | 37.3         |         |
| 32 | 16.1        | 19.2    | 23.4         |         | 30.3         |         | 37.0         |         |
| 33 | 16.0        | 19.3    | 23.3         |         | 30.2         |         | 36.7         |         |
| 34 | 16.0        | 19.4    | 23.2         |         | 30.0         |         | 36.5         |         |
| 35 | 15.9        | 19.4    | 23.1         |         | 29.8         |         | 36.2         |         |
| 36 | 15.9        |         | 23.0         |         | 29.6         |         | 35.9         |         |
| 37 | 15.8        |         | 22.9         |         | 29.4         |         | 35.7         |         |
| 38 | 15.8        |         | 22.7         |         | 29.2         |         | 35.4         |         |
| 39 | 15.7        |         | 22.6         |         | 29.0         |         | 35.1         |         |
| 40 | 15.7        |         | 22.5         |         | 28.8         |         | 34.8         |         |
| 45 | 15.4        |         | 21.9         |         | 27.8         |         | 33.3         |         |
| 50 | 15.0        |         | 21.1         |         | 26.7         |         | 31.7         |         |
| 55 | 14.6        |         | 20.3         |         | 25.4         |         | 29.9         |         |
| 60 | 14.1        |         | 19.4         |         | 23.9         |         | 27.9         |         |

## Stroke 100 (XR)

| β° | XRxx100L-24 |         | XRxx100L-28 |         | XRxx100L-32 |         | XRxx100L-36 |         |
|----|-------------|---------|-------------|---------|-------------|---------|-------------|---------|
|    | S (-β°)     | S (+β°) | S (-β°)     | S (+β°) | S (-β°)     | S (+β°) | S (-β°)     | S (+β°) |
| 0  | 44.5        |         | 53.2        |         | 62.5        |         | 72.7        |         |
| 1  | 44.2        | 44.9    | 52.7        | 53.7    | 61.8        | 63.2    | 71.7        | 73.6    |
| 2  | 43.8        | 45.2    | 52.2        | 54.2    | 61.2        | 63.9    | 70.9        | 74.5    |
| 3  | 43.5        | 45.6    | 51.7        | 54.7    | 60.5        | 64.6    | 70.0        | 75.5    |
| 4  | 43.2        | 46.0    | 51.3        | 55.2    | 59.9        | 65.3    | 69.1        | 76.5    |
| 5  | 42.9        | 46.3    | 50.8        | 55.8    | 59.2        | 66.1    | 68.3        | 77.6    |
| 6  | 42.5        | 46.7    | 50.4        | 56.3    | 58.6        | 66.9    | 67.5        | 78.7    |
| 7  | 42.2        | 47.1    | 49.9        | 56.9    | 58.0        | 67.7    | 66.7        | 79.8    |
| 8  | 41.9        | 47.5    | 49.5        | 57.5    | 57.4        | 68.5    | 65.9        |         |
| 9  | 41.6        | 47.9    | 49.0        | 58.1    | 56.9        | 69.4    | 65.2        |         |
| 10 | 41.3        | 48.3    | 48.6        | 58.7    | 56.3        | 70.2    | 64.4        |         |
| 11 | 41.0        | 48.7    | 48.2        | 59.3    | 55.7        | 71.1    | 63.7        |         |
| 12 | 40.7        | 49.2    | 47.8        | 59.9    | 55.2        |         | 62.9        |         |
| 13 | 40.4        | 49.6    | 47.4        | 60.6    | 54.6        |         | 62.2        |         |
| 14 | 40.1        | 50.1    | 46.9        | 61.3    | 54.1        |         | 61.5        |         |
| 15 | 39.8        | 50.6    | 46.5        | 62.0    | 53.5        |         | 60.8        |         |
| 16 | 39.5        | 51.0    | 46.1        |         | 53.0        |         | 60.1        |         |
| 17 | 39.2        | 51.5    | 45.7        |         | 52.5        |         | 59.4        |         |
| 18 | 38.9        | 52.1    | 45.3        |         | 51.9        |         | 58.8        |         |
| 19 | 38.6        | 52.6    | 44.9        |         | 51.4        |         | 58.1        |         |
| 20 | 38.3        |         | 44.5        |         | 50.9        |         | 57.5        |         |
| 21 | 38.0        |         | 44.2        |         | 50.4        |         | 56.8        |         |
| 22 | 37.7        |         | 43.8        |         | 49.9        |         | 56.2        |         |
| 23 | 37.4        |         | 43.4        |         | 49.4        |         | 55.5        |         |
| 24 | 37.2        |         | 43.0        |         | 48.9        |         | 54.9        |         |
| 25 | 36.9        |         | 42.6        |         | 48.4        |         | 54.3        |         |
| 26 | 36.6        |         | 42.2        |         | 47.9        |         | 53.6        |         |
| 27 | 36.3        |         | 41.8        |         | 47.4        |         | 53.0        |         |
| 28 | 36.0        |         | 41.5        |         | 46.9        |         | 52.4        |         |
| 29 | 35.7        |         | 41.1        |         | 46.4        |         | 51.8        |         |
| 30 | 35.4        |         | 40.7        |         | 45.9        |         | 51.2        |         |
| 31 | 35.1        |         | 40.3        |         | 45.4        |         | 50.6        |         |
| 32 | 34.8        |         | 39.9        |         | 44.9        |         | 50.0        |         |
| 33 | 34.5        |         | 39.5        |         | 44.4        |         | 49.4        |         |
| 34 | 34.2        |         | 39.1        |         | 44.0        |         | 48.8        |         |
| 35 | 33.9        |         | 38.7        |         | 43.5        |         | 48.2        |         |
| 36 | 33.6        |         | 38.4        |         | 43.0        |         | 47.6        |         |
| 37 | 33.3        |         | 38.0        |         | 42.5        |         | 46.9        |         |
| 38 | 33.0        |         | 37.6        |         | 42.0        |         | 46.3        |         |
| 39 | 32.7        |         | 37.2        |         | 41.5        |         | 45.7        |         |
| 40 | 32.4        |         | 36.8        |         | 41.0        |         | 45.1        |         |
| 45 | 30.8        |         | 34.7        |         | 38.4        |         | 42.0        |         |
| 50 |             |         |             |         |             |         |             |         |
| 55 |             |         |             |         |             |         |             |         |
| 60 |             |         |             |         |             |         |             |         |

Special β° angles possible under request  
ES Posibilidad de ángulos β° especiales DE Sonderwinkel auf Anfrage möglich (β°) IT E' possibile avere angolazioni β° speciali su richiesta PT Possibilidade de ângulos β° especiais FR Possibilité de réaliser des angles β° spéciaux.